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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,973	04/16/2004	Gregory E. Niles	18602-08906 (P3331US1)	1031
61520	7590	01/08/2010		
APPLE/FENWICK SILICON VALLEY CENTER 801 CALIFORNIA STREET MOUNTAIN VIEW, CA 94041			EXAMINER RIEPMO, JASON MICHAEL	
			ART UNIT	PAPER NUMBER
			2628	
			MAIL DATE	DELIVERY MODE
			01/08/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/826,973

Applicant(s)

NILES ET AL.

Examiner

JASON M. REPKO

Art Unit

2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 116, 121-123, 125-128, 130-133 and 135-137 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 116, 121-123, 125-128, 130-133 and 135-137 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 November 2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 116, 121-123, 125-128, 130-133 and 135-137 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,714,201 to Grinstein et al. in view of Michiel van de Panne, "Control Techniques for Physically-Based Animation," 1994, Thesis for the Department of Electrical and Computer Engineering University of Toronto [online].**

[retrieved on 08/19-2009] Retrieved from the Internet: <URL:
<http://www.dgp.utoronto.ca/~van/phd.ps.gz>>, pp. 83-115 ("Panne").

5. Regarding claim 116, Grinstein et al. disclose "in a computer implemented animation system, a method for animating an object (*Fig. 2*), the method comprising:

receiving an input specifying a Random Motion behavior (*receiving the instructions written in C++ that invoke the OpenMotion API as described in section 6.2 at column 15; motion behaviors are described in section 6.2.6, where it is disclosed "A Behavior is an action that changes a motion's parameters" in lines 12-14 of column 29*),

the Random Motion behavior indicating how to change a value of a position parameter of the object over time based on a partially random motion path (*the random wandering behavior for the ball, where the velocity direction is randomized as described in section 6.2.8.5 in lines 38-52 of column 38: " BehaviorVar wander=(velocityControl(randomDir(simTime())); ... Motion Ball; Ball.behavior (wander,...)" and*

a speed at which the object moves along the motion path (*the wander parameter not only gives a direction but also determines that the "ball will have a constant speed of 1 unit per second" as described in lines 37-38 of column 38*), wherein the speed is specified by a drag parameter (*a parameter given to a Behavior object as described in lines 21-28 of column 29*),

wherein a length of the motion path is specified by an amount parameter (*lines 62-67 of column 50: "The variance range controls the variation of*

movement between the maximum and minimum displacement of a motion. For example, shake may have a max. distance of 10 units and a min. of 10. With the variance set at 0%, the object will move rhythmically from side to side 10 units left and right.”; see also the parameter “when (isInside(goal, Ball)).perform(stop)” terminates the motion path, and thus, determines the length of the path; advanced parameters Fig. 10 and 20 described at section 6.4.3.1.2 of col. 50; see also a parameter given to a Behavior object as described in lines 21-28 of column 29);

wherein a shape of the motion path is determined by a random seed (in view of paragraph [0528] of Applicant’s PG PUB, simTime() is a random seed to velocity control disclosed at lines 38-52 of column 38 because, like Applicant’s “random seed”, the value itself is non-random but is a parameter to function that produces a random value);

a noisiness parameter (a parameter given to a Behavior object as described in lines 21-28 of column 29) that determines a level of jaggedness along the motion path (the wander parameter described in lines 38-40 of column 38 determines the direction as a dynamic function of “simTime”, and thus, determines the characteristics such as level of jaggedness of the motion path);

animating the object by changing the value of the position parameter of the object over time according to the Random Motion behavior (lines 46-53 of column 75:

“...generating an animated view of the given model in which the given model is

rendered at each of a succession of time values with individual ones of the model's nodes being shown in each successive rendering as having a position and orientation determined as a function of the value for the rendering's corresponding time value of the position and orientation values defined by the node's associated motion..."; section 6.2.6 describes Behaviors which changing the value of a parameter, for example position, over time); and

outputting the animated object (the end result of applying motions and behaviors is an animated image of an object as shown in Fig. 3 and described in lines 17-20 of column 53: "Since Mojo is a real-time motion editor, the model of the running man is shown moving according to a set of motions that have been applied to the individual nodes of its hierarchical model.").

6. Grinstein et al. does not disclose "a frequency parameter, which determines a crookedness of a motion path, wherein a higher value of the frequency parameter results in the motion path having more turns, and wherein a lower value of the frequency parameter results in the motion path being straighter." Grinstein's API does not provide an explicit programmatic abstraction for a frequency parameter to control the claimed "crookedness" of the motion path of Grinstein's animated ball.

7. Regarding claim 116, Panne disclose a behavior (*parameterized controller at section 5.5, p. 94*) indicating how to change a value of a position parameter of the object over time based on a motion path (*Figure 5.11 at p. 99*) and

"a noisiness parameter" (section 5.5 p. 94: " Using the parameterized controller requires specifying the values of these three parameters over time, namely: the turn

frequency, turn sharpness, and general heading of the turns.”) “that determines a level of jaggedness along the motion path” (Track 3 in Figure 5.11 at p. 99 shows a sharpness parameter controlling turn sharpness analogous to the recited jaggedness.);

“a frequency parameter” (section 5.5, p. 94: “ Using the parameterized controller requires specifying the values of these three parameters over time, namely: the turn frequency, turn sharpness, and general heading of the turns.”) “that determines a crookedness of a motion path, wherein a higher value of the frequency parameter results in the motion path having more turns, and wherein a lower value of the frequency parameter results in the motion path being straighter” (Track 2 in Figure 5.11 at p. 99 shows decreasing the frequency causes a decrease in the number of turns. For example, for lower values of frequency, e.g. the second half of the track, there are approximately four turns; and for higher values of frequency, e.g. the first half of the track, there are approximately nine turns. See also Fig. 5.7 on p. 94).

8. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate Panne’s parameterized control over frequency and noisiness in Grinstein’s animation system. The motivation for doing so would have been to simplify the creation and improve the realism of complex turning motions in animation, as discussed by Panne’s introduction of Chapter 5 on page 81. While turning motions shown by Panne could possibly be arrived at using some combination features of Grinstein’s API, the Panne teaches a simpler more intuitive way for the animator to specify these motions by using a single value that controls the

number of turns. For example, Grinstein's animated ball could be under the (partially random) directional control given by randomDir and be oscillating back and fourth along the motion path (shown in Penne at Figure 5.9) according to an additional frequency parameter taught by Panne (implemented as a parameter in Grinstein's API). Such a motion would be simpler for an animator to create by incorporating the teachings of Panne in Grinstein's API. Therefore, it would have been obvious to combine Grinstein et al. with Panne to obtain the invention specified in claim 116.

9. Claim 123 recites limitations similar to those of claim 116, but omits the amount, noisiness and drag parameters. The limitations of claim 123 are met by the combination of Grinstein et al. and Panne as shown in the rejection of claim 116 incorporated here by reference.

10. Regarding claim 125, Grinstein et al. does not expressly disclose "the Random Motion behavior can be further configured regarding a noisiness parameter, which determines a level of jaggedness along the motion path, and wherein a higher value of the noisiness parameter results in a motion path being more jagged."

11. Regarding claim 125, Panne discloses "the Random Motion behavior can be further configured regarding a noisiness parameter (*section 5.5 p. 94: "Using the parameterized controller requires specifying the values of these three parameters over time, namely: the turn frequency, turn sharpness, and general heading of the turns."*), which determines a level of jaggedness along the motion path, and wherein a higher value of the noisiness parameter results in a motion path being more jagged" (*Track 3 in Figure 5.11 at p. 99 shows a sharpness parameter controlling turn sharpness analogous to jaggedness. For example, the first half of the*

track, where sharpness is lower, the track is less jagged. The second half of the track, where sharpness is higher, is more jagged.).

12. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate Panne's parameterized control of noisiness of pseudo-random turning motions in Grinstein's animation system. The motivation for doing so would have been to simplify the creation and improve the realism of complex turning motions in animation. For example, see Panne's discussion in the introduction of Chapter 5 on page 81. Therefore, it would have been obvious to combine Grinstein et al. with Panne to obtain the invention specified in claim 125.

13. Regarding claim 126, Grinstein et al. disclose "the Random Motion behavior can be further configured regarding an amount parameter, which determines a length of the motion path, and wherein a higher value of the amount parameter results in the motion path being longer" (*lines 62-67 of column 50: "The variance range controls the variation of movement between the maximum and minimum displacement of a motion. For example, shake may have a max. distance of 10 units and a min. of 10. With the variance set at 0%, the object will move rhythmically from side to side 10 units left and right."*). The proposed combination as well as the motivation for combining the references presented in the rejection of the parent claim applies to this claim and is incorporated herein by reference.

14. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate Panne's parameterized control of length in Grinstein's animation system. The motivation for doing so would have been to give the user a greater degree of control over the final animation. For discussion of additional advantages of the parameterization, see Panne's

discussion in the introduction of Chapter 5 on page 81. Therefore, it would have been obvious to combine Grinstein et al. with Panne to obtain the invention specified in claim 126.

15. Regarding claim 127, Grinstein et al. disclose “the Random Motion behavior can be further configured regarding a drag parameter,” (*a parameter given to a Behavior object as described in lines 21-28 of column 29*), “which determines a speed at which the object moves along the motion path” (*the wander parameter not only gives a direction but also determines that the “ball will have a constant speed of 1 unit per second” as described in lines 37-38 of column 38*). The proposed combination as well as the motivation for combining the references presented in the rejection of the parent claim applies to this claim and is incorporated herein by reference.

16. Claims 121, 128 and 130-132 recite limitations similar in scope to the limitations of claims 116, 123 and 125-127, respectively, as a method on a computer program product. As shown in the rejection, the Grinstein et al. and Panne combination disclose the limitations of claims 116, 123 and 125-127, incorporated here by reference. Additionally, Grinstein et al. disclose a computer program product for animating an object, the computer program product comprising a computer-readable storage medium containing computer program code at lines 51-56 of column 6: “It should be understood that the invention is meant to include apparatus, methods, computer programming recorded on computer readable media, and propagated signals capable of providing functionality of the type recited in each claim, even if there currently are not claim covering each of these different class of inventions below.” Thus, the computer readable medium recited in claims 121, 128 and 130-132 are met by the combination according to the mapping presented in the rejection of claims 116, 123 and 125-127 because the computer readable medium stores the method disclosed in claims 121, 128 and 130-132. The proposed

combination as well as the motivation for combining the references presented in the rejection of the claim 116 applies to this claim and is incorporated herein by reference.

17. Claims 122, 133 and 135-137 recite limitations similar in scope to the limitations of claims 116, 123, and 125-127, respectively, as a method on a “machine-readable storage medium” within a system. As shown in the rejection, the Grinstein et al. and Panne combination disclose the limitations of claims 116, 123, and 125-127. Additionally, Grinstein et al. disclose a “A system for animating an object, the system comprising: a machine readable storage medium storing computer program code for performing a method” at lines 51-56 of column 6: “It should be understood that the invention is meant to include apparatus, methods, computer programming recorded on computer readable media, and propagated signals capable of providing functionality of the type recited in each claim, even if there currently are not claim covering each of these different class of inventions below.” Thus, the system recited in claims 122, 133 and 135-137 is met by the combination according to the mapping presented in the rejection of claims 116, 123, and 125-127. The proposed combination as well as the motivation for combining the references presented in the rejection of the claim 116 applies to this claim and is incorporated herein by reference.

Response to Arguments

18. Applicant's arguments filed 25 November 2009 have been fully considered but they are not persuasive.

19. The Examiner disagrees with Applicant's characterization of the Grinstein and Van de Panne references. In particular, Applicant asserts Grinstein's motion path is “determined solely by a random seed” and the Panne's motion path is “determined solely by a frequency parameter.”

To the contrary, both references teach that the motion path shape can be determined by combining several motions and using several parameters. In Grinstien's ball bouncing example taught in column 38, the randomDir function is used to control the velocity *direction*, but motion path of the Ball is also determined by "reflect(room)" command, among others. Thus, Grinstien's motion paths are not completely random because Grinstien's API gives the programmer the ability to combine several behaviors (random and non-random) to arrive at a final motion path. In addition, Grinstien gives the user control over several components of the motion (*e.g.* Table 10 of col. 26). Likewise, Panne's discloses a motion path that is not only controlled by frequency but also at least two other parameters as discussed in section 5.5 p. 94: "Using the parameterized controller requires specifying the values of these three parameters over time, namely: the turn frequency, turn sharpness, and general heading of the turns." Such a proposed combination could work as follows: Grinstien's animated ball could be moving in the direction specified by randomDir and oscillating in a non-random way according to the frequency parameter taught by Panne (shown in Penne at Figure 5.9). For at least this reason, Applicant's arguments are not persuasive.

20. Applicant's argument that Panne teaches away from the claimed invention is not persuasive because the "arbitrary path" discussed by Panne is not the same as a partially random path. The arbitrary path that Panne discusses involves an animator drawing a path that the object must exactly follow. By contrast, a partially random path recited in the claims and discussed in the rejection can be created by a procedure where the animator can input parameter values to control the path. That is, a path can be partially random without being arbitrary. Consequently, even if Panne could be characterized as teaching away from "arbitrary paths," doing so would

have no bearing on the proposed combination. Therefore, Applicant's argument that the reference teaches away from a partially random path is not persuasive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON M. REPKO whose telephone number is (571)272-8624. The examiner can normally be reached on Monday through Friday 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason M Repko/
Examiner, Art Unit 2628